Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)		BMP Number	Responsible Person(s)	Due Date
1	All Units	All Areas	Aquatic Resources, Soils/Hydrology	All	**Implement Best Management Practices (BMPs):** These practices are required to meet the regional policy and to be consistent with the provisions of the 1981 Management Agency Agreement between the State Water Resource Control Board (SWRCB) and the Forest Service as the designated Water Quality Management Agency (WQMA) on National Forest System Lands. See SMRs 22-24 for special provisions for the Lahontan Regional Water Quality Control Board (LRWQCB) jurisdiction. The Riparian Conservation Objective (RCO) analysis contains a table to display the relationship of the Riparian Conservation Areas (RCAs) and the Water Body Buffer Zones (WBBZs). Site-specific BMPs and management requirements, unit layout, careful implementation and monitoring of BMP implementation are the primary means of minimizing impact in this project area. Some BMPs in this list are applied during the preliminary project design and therefore are not referenced directly in the SMRs below. 1.1 timber sale planning process 1.2 timber harvest unit design 1.3 erosion hazard for timber harvest unit design 1.4 designated protection areas on sale area maps 1.5 limited operating period of timber sale activities 1.6 protecting unstable lands 1.8 streamside management zone designation 1.9 tractor-loggable ground 1.10 tractor skidding design 1.12 log landing location 1.13 timber sale erosion prevention and control measures 1.14 special erosion - prevention - disturbed lands 1.16 log landing erosion control 1.17 erosion control on skid trails 1.18 meadow protection during timber harvesting 1.19 stream course and aquatic protection	1.20 erosion control structure maintenance 1.21 accepting erosion control measures 2.1 travel management planning and analysis 2.2 general guidelines for the location and design of roads 2.3 road construction and reconstruction 2.4 road maintenance and operations 2.5 water source development and utilization 2.6 road storage 2.7 road decommissioning 2.8 stream crossings 2.10 parking and staging areas 2.11 equipment refueling and servicing 2.12 aggregate borrow areas 2.13 erosion control plans (roads and other activities) 5.2, 5.3, 5.6 limitations on tractor operations 5.4 revegetation of surface disturbed areas 5.7 pesticide use planning process 5.8 pesticide application according to label directions and applicable legal requirements 5.9 pesticide application monitoring and evaluation 5.10 pesticide spill contingency planning 5.11 cleaning and disposing of pesticide containers and equipment 5.12 streamside and wet area protection during pesticide application 6.2 water quality and formulating fire prescriptions 6.3 prescribed burning and protection of water quality 7.1 watershed restoration 7.2 conduct floodplain hazard analysis and evaluation 7.3 protection of wetlands 7.4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure (SPCC) Plan 7.8 cumulative off-site watershed effects		Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

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2	All Units	All Areas	Aquatic Resources, Soils/Hydrology	All	**Emphasis for Riparian Conservation Area (RCA) Protection:** Contract administrators and operators will be educated on the importance of minimizing impact while working within the RCA. Units with RCAs having known areas with restricted operations regarding sensitive sites will be identified for review with contract administrators and operators. Contract maps will be reviewed prior to bid to ensure sensitive areas are adequately represented on the map or on the ground. Stream courses and their respective protection limits (tractor keep out - TKO) are shown on the sale area map and/or are flagged on the ground.	1.1, 1.2, 1.4, 1.8, 1.18, 1.19, 7.1, 7..3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
3	All Units, 156	All Areas	Soils/Hydrology	Mechanical	**Equipment Operations - Uplands:** Equipment will minimize turning that results in ground disturbance. Equipment will be used on slopes no greater than 30% with short pitches up to 200 feet on up to 35% slope. Short pitches over 35% slope may be agreed to on a site-specific basis, after appropriate interdisciplinary review. **Grapple Piling:** Grapple piling will be conducted to minimize excessive turning and to maintain undisturbed duff over 20% of the unit area. **Soil Dryness Criteria:** 1) Equipment rated as low-ground-pressure, which is defined as equipment applying an average ground pressure of 8.0 or less pounds per square inch design load, is restricted to main skid trails until the soil is dry to a depth of 4 inches. 2) Equipment rated as high-ground-pressure equipment which is defined as equipment applying an average ground pressure of 8.0 or greater pounds per square inch design load, is restricted to main skid roads until the soil is dry to a depth of 10 inches. See SMR 24. **Benched logging systems:** Avoid benched skid trails, landings, and temporary roads. One benched landing is expected to be needed in unit 156. Prior to determining placement, an onsite review will be conducted in this unit with the hydrologist to confirm placement is in the best available location for operability, to minimize resource impacts and to develop required resource protection measures. No other benched temporary roads or landing needs were identified during the IDT process. If, during operations a need for a bench system is identified, then appropriate specialists will be consulted and the necessary mitigations will be implemented.	1.1, 1.2, 1.9, 1.10, 1.12, 1.13, 2.7, 5.2, 5.3, 5.6	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

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4	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical/ Hand	**Equipment Operations in RCAs:** Within RCAs, all equipment operations should be limited to slopes ≤ 20% if the slope is directly above, and runs continuously down to a drainage feature. If the slope is > 20%, but does not slope directly into the creek, the 30% rule with no short pitches to 35% as stated in "Equipment Operations - Upland" SMR 3 should be followed. Do not track up and down drainage pathways and minimize all equipment movement through swales. Equipment will avoid seasonally wet areas, but will be allowed to reach into the TKO of these locations to meet site objectives. When equipment is operating inside RCAs near the hydrologic feature, minimize ground disturbance with short perpendicular entries into the RCA. Backblade any berms created by equipment that could concentrate water within areas with topographically low relief (flat) areas. Equipment will not cross seasonal streams except at pre-approved designated crossings. Within RCAs all bare ground resulting from equipment operations will be mulched to standards. When operating in WBBZs all bare ground will be mulched. **Grapple Piling** and Fuel Piling: No hand, grapple or any type of natural or activity fuel piling (temporary or permanent) will occur in the WBBZ, or within the 100 year flood plain. Piling may occur in the RCA outside of WBBZ where existing landings occur in the RCA or where pre-approved landings occur in the RCA. Grapple piling will follow the same or greater distance restrictions as mechanical operations on wetland features drainages and perennial streams (fish bearing or non-fish bearing), as described in SMRs 2, 17, and 18. Along ephemeral streams and drainages, grapple piling will be maintained a minimum of 25 feet away from the break in slope on all topographically defined drainages. Piling will occur as far away from the drainage as feasible. Avoid creating large piles at the apex of broad swales and locate piles well outside of drainage pathways. **Soil Dryness Criteria:** Specific harvesting equipment restrictions relating to dry soil are as follows: The operation of tracked equipment within stream and meadow RCAs, and seasonally wet areas shall only be allowed when soils are dry as defined in SMR 24 to 10 inches. Exceptions will be allowed in specific locations in the RCA, in which the hydrologist or soil scientist determine that equipment access when soils are dry to less than 10 inches would not cause resource damage. Tractor, vehicle or equipment operations off-road at approved crossings within approved areas of Water Body Buffer Zones operations must be limited to when soils are dry to a minimum depth of 12 inches. **Soil Type Restrictions:** All equipment operations will not operate over Aquoll and Boroll soil or Cryumbrepts-wet soil. This addresses the criteria for operations in water body buffer zones required for Category 6 timber waiver criteria, because with the 25 foot buffer from riparian vegetation and the commitment for no operations over Aquoll and Boroll soil or Cryubrepts wet, and the cover the scenario where an equilibrated watertable at 2 feet might be present. In other words we do not operate over soils with an equilibrated water table at 2 feet under mechanical harvest activities. **Reference SMRs 1 and 22-24 for BMPs and measures implemented to meet LRWQCB requirements.**	1.1, 1.2, 1.8, 1.9, 1.10, 1.12, 1.13, 1.17, 1.19, 2.2, 2.5, 2.6, 2.8, 2.10, 2.13, 5.2, 5.3, 5.6, 7.1, 7.2, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

<table>
<tr><th>SMR Number</th><th>Unit</th><th>Emphasis Area</th><th>Concern</th><th>Treatment Activity</th><th>Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)</th><th>BMP Number</th><th>Responsible Person(s)</th><th>Due Date</th></tr>
<tr><td>5</td><td>All Units</td><td>All Areas</td><td>Aquatic Resources, Soils/Hydrology</td><td>Mechanical</td><td>Equipment Operations in RCAs (continued): Within the RCA adjacent to perennial streams and special hydrologic features, a variable Tractor Keep Out (TKO) area will be provided based on hydrologic features, and under consultation with the aquatics biologist/ hydrologist/soil scientist during unit layout and contract administration. In general, these TKO areas are designated to be a minimum of 25 feet from a riparian feature as identified by presence of a wet soil type (associated with flood plain, springs or meadows), scour, riparian vegetation, slope break to channel etc. Seasonal drainages not having these features will implement a 25 foot TKO. Widths will increase along incised channels and where the slope to the channel increases. On fens, springs and streams with riparian vegetation, a minimum 25 foot TKO from riparian vegetation will be maintained. The TKO will be increased where hydrologic features merge or drainage becomes complex, where wet soils are present, or as needed to protect spring hydrology.
Tractor operations will be excluded from the meadows according to the TKO identified in the field and as identified on the sale area maps. The TKO will be flagged on the ground based on hydrologic features or as mapped and described above. Slash or other material created from activities will be removed from the 100-year floodplain.
Reference SMRs 1 and 22-24 for BMPs and measures implemented to meet LRWQCB requirements.</td><td>1.1, 1.2, 1.4, 1.8, 1.9, 1.10, 1.13, 1.16, 1.18, 1.19, 2.8, 2.10, 2.13, 5.2, 5.3, 5.6, 7.1, 7.2, 7.3</td><td>Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer</td><td>Contract Prep, Contract Layout, Implementation, post-implementation</td></tr>
<tr><td>6</td><td>All Units</td><td>All Areas</td><td>Soils/Hydrology</td><td>Mechanical</td><td>Skid Trail Use: Keep skid trail grades as gentle as possible, avoid straight up and down the slope skidding over distances greater than 200 feet. Skid trail patterns shall be agreed to in advance of felling and main skid trails shall be flagged on the ground in advance of felling. Needed main skid trails will be constructed in advance of skidding. Main skid trails will be spaced no less than 75 feet apart, except when converging. Additional skid trails may be agreed upon when soil conditions permit. Harvest operations will be confined to designated main skid trails until soil conditions are dry. Dry soil is defined as soil that when sampled from a specified depth below the surface and placed in the hand and squeezed, the hand shows no significant moisture stains and follows the dryness criteria in SMR 24. Existing skid trails will be used whenever possible except when they do not meet other resource protection measures.
<u>Erosion Hazard Rating (EHR) Table: Skid Trail Spacing</u>
<table><tr><th colspan="5">Guidelines for Waterbars Tractor Skid Trails or Roads</th></tr><tr><td></td><td colspan="4">Erosion Hazard Rating</td></tr><tr><td></td><td>1-6</td><td>6-7</td><td>9-10</td><td>11-13</td></tr><tr><td></td><td>Low</td><td>Med.</td><td>High</td><td>V High</td></tr><tr><td>% Slope</td><td colspan="4">Spacing in Feet</td></tr><tr><td>1-6</td><td>400</td><td>350</td><td>300</td><td>250</td></tr><tr><td>7-9</td><td>300</td><td>250</td><td>200</td><td>150</td></tr><tr><td>10-14</td><td>200</td><td>175</td><td>150</td><td>125</td></tr><tr><td>15-20</td><td>150</td><td>120</td><td>90</td><td>60</td></tr><tr><td>21-40</td><td>90</td><td>70</td><td>50</td><td>30</td></tr><tr><td>41-61</td><td>50</td><td>40</td><td>25</td><td>15</td></tr></table></td><td>1.2, 1.9, 1.10, 1.13, 5.2, 5.3, 5.6</td><td>Hydrologist, Soil Scientist, TSA, Vegetation Officer</td><td>Contract Prep, Contract Layout, Implementation</td></tr>
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7	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	**Skid Trails in RCAs:** Main skid trails will be located outside of the RCAs wherever possible. Do not track up and down drainage pathways and minimize all equipment movement through swales. Avoid locating skid trails parallel to streams when working within RCAs in the near stream zone. Temporary ephemeral stream crossings for skid trails will use brush mats, dips or corduroy. If soil is placed on a crossing for a drivable surface, use filter cloth under the soil to prevent soil from entering stream. Collect soil in filter cloth or otherwise remove soil off site when dismantling the drivable surface structure. Crossing materials will be removed as soon as possible following the treatment and will be implemented by October 15th of that year. All crossing materials on seasonal channels that consist of additional fill will be removed immediately after use when operating after October 15th of that year. **Reference SMR 6 EHR Table and SMRs 1 and 22-24 for BMPs and measures implemented to meet LRWQCB requirements.**	1.2, 1.8, 1.9, 1.10, 1.13, 1.19, 2.8, 2.10, 2.13, 5.2, 5.3, 5.6, 7.2, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation
8	All Units	All Areas	Soils/Hydrology	Mechanical	**Skid Trails for Seasonal Erosion Control:** All skid trails over 30% slope will be mulched. Skid trails will have waterbars spaced according to soil maximum EHR and slope per SMR 6. Implement mulching of skid trails using slash, certified weed free rice, straw or wood chips, whichever is available, on soils with very high EHR, and where the residual % ground cover does not meet the ESC requirements as described in the Soil Specialists Report for the Sagehen Project. Mulch will be a minimum of 2 inches to a maximum of 4 inches in depth within WBBZs outside of the 100-year floodplain. This requirement may be modified after an on-site inspection by the soil scientist or hydrologist. If slash is used for mulch, the fuels officer will be involved prior to and during implementation.	1.2, 1.9, 1.10, 1.13, 1.20, 1.21, 2.13, 5.2, 5.3, 5.6	Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
9	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	**Skid Trail Post-Implementation in RCAs:** For special conditions with low gradient skid trails within RCAs, berms will be pulled back rather than have water bars placed, as approved by the TSA in coordination with a soil scientist or hydrologist. Mulch all skid trail crossings in RCAs, outside of the 100-year floodplain.	1.2, 1.8, 1.9, 1.10, 1.13, 1.19, 1.20, 1.21, 2.8, 2.13, 5.2, 5.3, 5.6, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
10	All Units	All Areas	Soils/Hydrology	Mechanical	**Landing Construction:** Utilize existing landings where possible, new and existing landing locations potentially used are shown in the Sagehen Project Record. Locate all new landings off of main public travel corridors outside of the WBBZ. **Landing Locations:** landing locations shall be carefully planned to minimize the number needed, and will consider site-specific factors such as topography, watershed and other resource protection concerns, and contract operational needs. For landings that service more than 15 acres of harvest, Purchaser shall stage-log by felling, skidding and removing of included timber in two or more separate operations to limit landing size. Where using existing landings that need to be increased in size for biomass and chip van access the landings will be extended in size away from drainages. If impact may not be minimized the operator will consider feasibility of moving biomass in the upcoming year when biomass can be stored off-site. Where site-specific resource protection concerns are not otherwise limiting, the number of landings should not exceed 1 landing per 30 acres. To minimize the number of landings, utilize roads for skidding unless site conditions rule this out due to possible safety or resource protection concerns.	1.1, 1.2, 1.10, 1.12, 1.13, 1.16, 2.10, 2.11	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation

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11	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	**Landings in RCAs:** No new landings will be located within an RCA unless deemed necessary by the interdisciplinary team; when feasible, preferably choose existing landings outside of the RCA. No new landing locations have been identified as needed within RCAs. All existing landings in RCAs will be subsoiled and mulched unless a hydrologist/soils scientist determines it is not necessary. If construction or relocation of a landing within an RCA appears to be necessary, consult with the appropriate resource specialist to ensure potential impacts are mitigated. Biomass, logs, tree tops and logging slash will not be landed such that they obstruct drainages or enter the TKO or WBBZ as is applicable based on LRWQCB stream classification.	1.1, 1.2, 1.10, 1.12, 1.13, 1.16, 1.19, 2.10, 2.13, 7.2, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation
12	All Units	All Areas	Soils/Hydrology	Mechanical	**Landings & Skid Trails Post-Implementation:** Subsoil with a winged subsoiler on landings and the first 100 feet from the landing's primary skid trails. Subsoiling other skid trails in highly compacted areas will be evaluated on a site by site basis. The need for the tilling of skid trails would be reviewed by a soil scientist or hydrologist, and the timber sale administrator, and would be restricted to areas on slopes less than 25%, where residual trees would not be excessively damaged (root tearing leaving areas open to disease) and on those trails that do not contain excessive rocks unless otherwise agreed with the hydrologist/soil scientist. Subsoiling will always be performed perpendicular to any slope.	1.12, 1.13, 1.16, 1.17, 1.21, 2.10, 2.13	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
13	All Units	All Areas	Soils/Hydrology, Vegetation Mgmt	Mechanical/ Hand	**Application of Sporax®** will follow all state and federal rules and regulations as they apply to pesticides, including the Sporax® label requirement. Sporax® will not be applied within 25 feet of running water. Sporax® will be applied to all pine stumps ≥ 14 inch diameter within 4 hours of creation. Sporax® will not be applied during periods of sustained rain. A Pesticide Use Proposal (FS-2100-2) for the application of Sporax® has been completed and approved, and will be present in the project file and contract. In addition, the project file and contract will include a spill plan tiered to the Forest Spill Plan. Mountain yellow legged frog Individuals have been sighted in areas associated with unit 61 (Emphasis areas 1 and 2), unit 91 (Emphasis area 2), and unit 213 (Emphasis areas 1, 2, 4, and 6). Unit 213 has the potential to cut trees greater than 14 inches dbh, therefore Sporax® may be applied. An Aquatics biologist will review areas within 500 feet of occupied sites of MYLF to determine if application of Sporax® should be avoided.	1.19, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 7.2, 7.3, 7.4	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
14	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical/ Road	**Water Sources:** • Use an approved water source for obtaining water. Water drafting sites in the project area will be established on permanently flowing streams that have sufficient flow to avoid depletion of pool habitat. • Where streams are the sole water source, drafting would be allowed until stream flows reach 2 cfs. Below 2cfs, drafting would only be allowed in previously developed off-site water impoundments and according to guidelines as outlined in the Tahoe National Forest Land and Resource Management Plan (LRMP). • Install screens on water intake lines to prevent entrainment of biota. • To avoid impacts to Mountain Yellow-Legged Frog, identify all drafting sites to be used for project implementation, and report these to the aquatics biologist to allow the implementation of the mitigation measures listed in SMR 31. • Do not overfill tanks when collecting water as this can lead to increased sedimentation to the stream channel. • Do not back water trucks beyond the established access developed to access the water source. • If use of water source creates sediment movement on access route. Apply clean crushed gravel or other means to control sediment, and maintain water quality. • If a water drafting source within the 100-year floodplain is not currently rocked, and added controls are needed to prevent sediment from washing into the water source, use straw bales, staked waddles or other methods to filter sediment.	1.19, 1.20, 1.21, 2.4, 2.5, 2.11, 2.13	Aquatics Biologist, Road Engineer, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation

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15	All Units	All Areas	Soils/Hydrology	Mechanical/ Road	**Have an approved Spill Prevention Control and Countermeasure plan.** 1. Plan for appropriate equipment refueling and servicing sites during project planning and design. 2. Allow temporary refueling and servicing only at approved locations, which are well away from water or riparian resources, outside of RCAs. 3. Develop or use existing fuel and chemical management plans (for example, spill prevention control and countermeasures (SPCC), spill response plan, emergency response plan) when developing the management prescription for refueling and servicing sites. 4. Provide training for all personnel handling fuels and chemicals in their proper use, handling, storage, and disposal. 5. Avoid spilling fuels, lubricants, cleaners, and other chemicals during handling and transporting.	1.1, 1.2, 2.4, 2.10, 2.11, 2.13, 7.4	TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation
16	All Units	All Areas	Fuels Mgmt, Soils/Hydrology, Vegetation Mgmt, Wildlife	All	**Ground cover requirements for all activities:** To protect against accelerated erosion and hydrophobicity and to maintain long-term soil productivity, the following guidelines should be applied during the planning and implementation of fuels treatments and vegetation management. **Downed Large Wood Requirements** Where grapple piling is proposed, maintain downed wood retention adequate to contribute to organic matter while attaining desired conditions as described in the Sagehen EA. Retain large downed wood as prescribed by emphasis area while meeting fuels objectives (small areas of heavier concentrations that are not continuous on the landscape). Provide for downed wood retention per emphasis area prescription. All down logs greater than 15 inches diameter and 10 feet long will be retained. Crushing of logs with equipment will be avoided. Target down log levels post fuels treatments range from 15-20 logs per acre in emphasis areas 1 and 2 and 3-7 logs per acre in the other emphasis areas. In areas not meeting downed wood requirements, incorporate burn prescription measures such as lining, and contract requirements to maintain existing downed logs (preference to spring burn prescription). **Ground Cover - Monitoring** The following are used as a general guide that will be practically implemented and assessed using random implementation monitoring and focused monitoring of areas of concern, through the BMPEP monitoring program. If the minimum effective soil cover requirements are not being met (i.e. ground cover requirements are not shown to be effective in controlling erosion) management practices should be reviewed and adjusted as needed to achieve soil cover objectives, and mitigation measures such as mulching will be implemented as needed to reduce soil erosion. **General Ground Cover Requirements Outside of RCAs (post-implementation of all treatments to meet Standards and Guides and SMRs)** • On soils with low to moderate erosion hazard ratings (0-25% slope), maintain 45% ground cover. • On soils with high erosion hazard ratings (25-50 % slope), maintain 55% ground cover. • On soils with very high hazard ratings (greater than 50% slopes), maintain 70% ground cover. SMR 8 regarding mulch depth requirements also applies.	1.9, 1.13, 1.16, 1.17, 1.20, 1.21, 2.13, 5.4, 6.2, 6.3	Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist	Project Design, Contract Prep, Contract Layout, Implementation, post-implementation

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17	All Units	All Areas	Aquatic Resources, Fuels Mgmt, Soils/Hydrology, Vegetation Mgmt, Wildlife	All	**Ground Cover Requirements Within the RCAs** Mulching will occur over bare ground created by management activities within the RCA with particular attention paid near the hydrologic feature. Upland areas of the RCA will meet the General Ground Cover requirements within the RCAs. • On soils with low to moderate erosion hazard ratings (0-25% slope), maintain 70% ground cover. • On soils with very high erosion hazard ratings (greater than 25% slope), maintain 75% ground cover. • In near stream zones for perennial streams and intermittent streams or seasonally wet areas with riparian and meadow features, approximately 75% ground cover will be required. Large patches of bare ground will be mulched. Within Water Body Buffer Zones, ground cover should meet an average of 2 inches in depth and a maximum of 4 inches with 90% ground cover. • Mulch will be required on endline drag channels that exceed 4 inches depth on greater than 5% slopes in RCAs and 10% slopes on adjacent uplands where endlining is required. See SMR 26 regarding weed-free requirement of mulch. SMR 8 regarding mulch depth requirements also applies.	1.9, 1.13, 1.20, 1.21, 2.13, 5.4, 6.2, 6.3, 7.2, 7.3	Aquatics Biologist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist	Contract Prep, Contract Layout, Implementation, post-implementation

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18	All Units, 46, 76	All Areas	Aquatic Resources, Fuels Mgmt, Sensitive Plants, Soils/Hydrology, Vegetation Mgmt, Wildlife	Pile Burning/ Underburn	**Burn Prescriptions in RCA** • Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. • No active ignitions for underburning would occur within 25 feet of riparian vegetation and 50 feet from fens. Down wood will be retained based on site conditions to achieve riparian conservation objectives and ground cover requirements. If logs need to be removed from channels to achieve fuel objectives the hydrologist or soil scientist will be consulted. • No active ignitions for prescribed burns in Waterbody Buffer Zones but broadcast burns can creep into these areas. • No hand piling or burning would occur within 25 feet from riparian vegetation and stream channels or within meadows. • The fire prescription should target the lowest possible soil temperature increase for the shortest duration of time. • The fire prescription should target the highest duff layer moisture levels consistent with the fuel reduction and soil cover objectives. • Avoid burning road drainage outlets, such as waterbars and rolling dips, and out sloped roads within RCAs. If such areas do get burned, consider mitigations measures such as mulching to reduce sediment transport. • If fire from underburning threatens to burn riparian vegetation and aquatic habitat, and/or the ground cover objectives will not be achieved, then the fire would be controlled or extinguished using minimally ground-disturbing methods and/or water application. • No active ignition or pile burning within 50 feet of fens and springs. This distance may need to be increased depending on ground conditions to prevent burning through wetland features. Fire creep is allowed but not encouraged. • Burning shall be conducted under conditions that facilitate low intensity surface fire. If needed to achieve burn objectives and fen protection objectives, prior to burning, slash remaining from prior logging activities will be modified around the fen to ensure objectives can be met. Prescribed fire prescriptions surrounding springs, fens and wet meadows will avoid application during periods of extended drought conditions. • Underburn prescriptions in mastication units will favor soil moisture conditions of 20% soil moisture (soil is not wet, but is cool by touch) when possible. •To prevent effects to MYLF consult the aquatics biologist about, or do not allow the use of foam during prescribed burning activities within RCAs.	1.8, 1.19, 2.13, 6.2, 6.3, 7.2, 7.3	Aquatics Biologist, Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
19	All Units	All Areas	Soils/Hydrology	All	**Erosion Prevention Measures in activity areas** : Erosion control work is inspected prior to the end of the normal operating season to determine whether the work is adequate. Additional measures will be applied when needed to meet water quality standards. **Erosion Control Plan:** All phases of project implementation will include a BMP checklist that will be developed based on the measures described in the Sagehen Project Environmental Assessment Appendix A, Standard Management Requirements (SMRs). The project SMRs are considered to be a part of this erosion control plan, and will be kept on site during implementation and be incorporated into an applicable check list. Any ground disturbing activities that are determined to fall outside of the exemption from the requirement to prepare an erosion control plan, will have additional information including maps, illustrations, and wet weather operations as deemed necessary and described under BMP 2.13 of the Erosion Control Handbook. **Vegetation Management**: All necessary erosion control measures for logging operations will be implemented as soon as possible after logging operations cease in the area and prior to runoff producing rainfall. All erosion prevention measures will be implemented by October 15th. For harvest activities continuing beyond October 15th , erosion control measures on active sites will be implemented at the first opportunity. **Roads:** Erosion control measures are implemented by the end of the normal operating season, (usually October 15 for this area) and kept current when road construction occurs outside that period. Stabilization of fills and completion of winterization is required by October 15. This includes the removal of temporary culverts, culvert plugs, diversion dams, or elevated stream crossing causeways. It also includes installation and/or removal of crossdrains, energy dissipators, sediment basins, berms, debris racks, mulching, or other items needed to control erosion. Other preventive measures include the removal of debris, obstructions, and spoil materials from channels and floodplains.	1.1, 1.3, 1.13, 1.14, 1.16, 1.17, 1.19, 1.20, 1.21, 2.4 2.8, 2.13, 7.2, 7.3	Hydrologist, Road Engineer, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
20	All Units	All Areas	Soils/Hydrology	Road	**Road Management** **Coordination with Road Engineer:** Before pulling equipment from the sale area, the TSA will coordinate a review period with the road engineer to ensure road features (drainage, surface, etc.) achieve road management objectives. **Repair and maintain** up to 23 miles (miles determined by GIS and are approximate) of roads, that provide access for the Sagehen Project. This work includes: grading, clearing, ditch and culvert cleaning and repair. The repair work associated with these projects is the maintenance work to repair and restore the road to accommodate the planned traffic and be consistent with the existing traffic service level, water quality objectives, and Road Management Objectives. **Low water crossings** on Class I and II drainages on existing roads will incorporate additional measures during haul to prevent sediment transport from increased travel through drainages. This may include additional rock and culvert installations based on site conditions. A 1-ft covering of weed-free straw mulch will be placed between the natural channel and imported fill so no additional fill remains in the existing channel. Fill will be removed to the previous existing dip configuration by 10/15 or the first opportunity after this date if conditions allow operations to continue past this date as described below. **Road Dust Abatement:** Water will be used on major transportation routes for dust abatement. **Ephemeral Stream Crossings on Temporary Roads** • Crossings will be designed to provide measures to pass flows, and may include extra protection measures, such as gravel, culverts or drainage controls when needed. Typically, the flow volume through these crossings is low and there is a low risk of significant precipitation during the operating period. Wet weather clauses are included to limit operations in inclement weather, when soils deform or compact, and road rutting and deformation become significant. Temporary crossings will be removed the same season they are installed, and removal will occur no later than October 15th of the season of installation. • Temporary roads crossing ephemeral drainages will be designed to pass flow using drainage dips, waterbars or culverts when needed. Removal of temporary roads on ephemeral drainages will include re-establishing drainage passage, mulching, and pulling outside berms to restore overland flows. See “Temporary Roads” for more design elements regarding ephemeral crossings. **Traffic Control During Wet Periods:** Hauling on all roads would be restricted to the dry season when roads are stable. No Winter Hauling will be conducted, although some operations may continue past 10/15 to 11/30 if conditions permit as determined by the soil scientist/hydrologist and TSA. Hauling on all roads would be restricted to the dry season when roads are stable, or as per the 9/95 Wet Weather/Winter Hauling/Logging Guidelines if that option is implemented.	1.1, 1.14, 1.19, 1.21, 2.2, 2.4, 2.5, 2.7, 2.8, 2.12, 2.13	Hydrologist, Road Engineer, Soil Scientist, TSA	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
21	All Units	All Areas	Soils/Hydrology	Road	**Temporary Roads (including previously-tilled temporarily used roads):** • Only temporary roads identified in the NEPA process will be reused. If additional roads are necessary, the hydrologist will be notified and appropriate documentation and remedial action will be incorporated. • If it is determined that additional stream crossings are needed on temporary roads, they must be approved by the interdisciplinary team. • In unit 163, the temporary road will be closed when not in use for project activities (blocked, bermed, or otherwise closed to public access). **Design Criteria:** • Temporary road design and location will follow the following principles: Temporary roads will follow previously-used road beds where available and appropriately located. • Use rolling dips and an out-sloped road template. • Limit the amount of temporary road construction by maximizing the skidding distance. • Minimize the length and width of the roads. Avoid unstable areas where there is potential for mass soil erosion. • During implementation of the proposed action or action alternatives, if vehicles stir up fines in dry streambeds or where needed for support during project activities, additional clean 1"+ gravel will be added to the crossing surface. •Use weed-free straw 1-foot deep under gravel as a barrier between native soils and the gravel within the 100-year floodplain so the material can be removed after use. **Restoration (also see SMR 41 for specific actions):** • Excess materials placed in drainage ways would be removed from drainages after use. • Decommission all temporary roads. Temporary roads will be decommissioned according to Renewable Resources Planning Act (16 USC 1608): appropriately draining the road to establish a hydrologically neutral state, pulling berms (particularly including the mineral soil) and re-establishing the natural contour in necessary areas. Particular attention will be paid to roads within the RCA or when crossing drainages. • Where needed, mulch will be applied to control erosion. Subsoil temporary roads where determined to be necessary after review by a soils scientist or hydrologist. • Decommissioned temporary roads in RCAs will be mulched to control erosion, but mulch will not be placed in the 100 year flood plain. • Block or otherwise prevent long-term access over temporary roads, where needed to deter unauthorized use, place logs and logging slash over the first 200 feet.	1.1, 1.6, 1.14, 1.19, 2.1, 2.2, 2.4, 2.6, 2.7, 2.8, 2.12, 2.13, 7.1, 7.2, 7.3	Hydrologist, Road Engineer, Soil Scientist, TSA	Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
22	All Units	All Areas	Soils/Hydrology	All	**Lahontan Regional Water Quality Control Board (LRWQCB) Provisions:** In addition to the following requirements, SMRs 3, 6, 7, 8, 11, 14, 18, 21 and 41 detail measures taken in Waterbody Buffer Zones and 100-year floodplains to insure consistency with LRWQCB requirements. **Mechanical equipment:** Equipment will only operate on dry soils as defined by the LRWQCB. See SMR 24 detailing work in WBBZs. **Activities Conducted Under Category 6:** Activities conducted under Category 6 will follow the eligibility requirements and conditions as described in Board Order No. R6T-2009-0029 Condition Waiver of Waste Discharge Requirements for Waste Discharges Resulting from Timber Harvest and Vegetation Management in the Lahontan Region (e.g. 2009 Timber Waiver). The required monitoring and reporting conditions would also be followed as described in the Order. **Activities Conducted Under Category 4:** Activities conducted under Category 4 will follow the eligibility requirements and conditions as described in 2009 Timber Waiver. The required monitoring and reporting conditions would also be followed as described in the Order. **Hand Piles Operating Under Category 2:** Piles will not be located within 100-year floodplain of any watercourse. No piles will be located within 25 feet of Waterbody Buffer Zones. No more than 10% of the area within the WBBZ shall be covered in piles. This condition means less than 10% of the WBBZ area is subject to vegetation management activities. **Note:** activities not following these requirements will apply for an applicable category. **Temporary Roads:** For temporary roads the proposed action will meet the criteria of Appendix N for the Lahontan Timber Waiver Waste Discharge Prohibition Exemption Information, Page 6 of 6 (Attachment N) Board Order No. R6T-2009-0029 Adopted May 14, 2009. Activities for temporary roads will meet all the following conditions: a. Temporary stream crossings are constructed with clean cobbles or logs. If sand or soil is used as running surface, BMPs must be in place (e.g. filter cloth, brow logs) to prevent discharge of earthen materials to surface waters. b. Stream crossings are completely removed at the end of operations, or prior to the winter period (as defined in Attachment A of the Timber Waiver), whichever is sooner. c. Eligibility criteria and conditions of applicable Waiver Category are met.		Aquatics Biologist, Fuels Officer, Hydrologist, Road Engineer Soil Scientist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
23	All Units	All Areas	Soils/Hydrology	All	**Lahontan Regional Water Quality Control Board (LRWQCB)(Cont'd)** **100-Year Floodplains,** based on the definition in the 2009 LRWQCB timber wavier Attachment A, are areas determined based on delineations completed or approved by the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, or an individual qualified to make floodplain delineations. If these agencies have not completed formal delineations, the Water Board staff may agree to the use of best professional judgment; field verification by staff may be needed. These areas include land adjacent to waterbodies that extend to the outer perimeter of lands which experience flooding or are inundated with water during 100-year flood events. At a minimum, dischargers shall designate the 100-year floodplain area to encompass the bed and bank of any ephemeral drainage course. If other indicators are present such as wet vegetation on terraces, or other high water indicators, such as stranded debris, these should also be taken into consideration. For cases of unconfined channels, other indicators may need to be considered. **The following would apply to all Waiver Categories with Provisions for 100-Year Floodplains:** No piling or burning of piles will occur in 100-year floodplains. No new landings will be located in 100-year floodplains. No existing landings are located in 100-year floodplains No equipment will enter 100-year flood plains except at existing roads and crossings. Chips or masticated material will not be placed within the 100 year flood plain. Prohibited discharges to 100-year floodplains do not occur if activities meet a. or b., and c. below: a. Chips or masticated material is incorporated into the soil, or b. Chips or masticated material do not exceed an average of two inches in depth, with a maximum of four inches, and c. Eligibility criteria and conditions of applicable Waiver Category are met.		Aquatics Biologist, Fuels Officer, Hydrologist, Road Engineer Soil Scientist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

<table>
<tr><th>SMR Number</th><th>Unit</th><th>Emphasis Area</th><th>Concern</th><th>Treatment Activity</th><th>Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)</th><th>BMP Number</th><th>Responsible Person(s)</th><th>Due Date</th></tr>
<tr><td>24</td><td>All Units</td><td>All Areas</td><td>Soils/Hydrology</td><td>All</td><td>Lahontan Regional Water Quality Control Board (LRWQCB)(Cont'd)

Protocol for determining operability of soils based on soil texture when working in WBBZ.

<table>
<tr><th>Soil Moisture % Increases Downward</th><th>Coarse Soils
Loamy sands, fine sand loam, very fine sands, coarse sands</th><th>Light Soils
Fine sandy loams, sandy loams, very fine sandy loam</th><th>Med. Soils (<35% clay)
Sandy clay loam, loam, silt loam, sandy clay loam, clay loam</th><th>Heavy Soils (>35% clay)
Clay loam, sandy clay, silty clay loam, clay</th></tr>
<tr><td>Dry soils</td><td>Dry, loose, single grained flows thru fingers</td><td>Dry, loose, flows thru fingers</td><td>Powdery, dry, sometimes slightly crusted but breaks down into powdery conditions</td><td>Hard, baked, cracked sometimes has loose crumbs on surface</td></tr>
<tr><td>Moist soil</td><td>Still appears dry, will not form a ball with pressure</td><td>Still appears to be dry; will not form a ball</td><td>Somewhat crumbly, but will hold together from pressure</td><td>Somewhat pliable; will form ball under pressure. At plastic limit.</td></tr>
<tr><td>Moist soil</td><td>Still appears dry, will not form a ball with pressure</td><td>Tends to ball under pressure but seldom will hold together</td><td>Forms a ball and is very pliable, sticks readily if high in clay.</td><td>Easily ribbons out between fingers, has a slick feeling. At plastic limit.</td></tr>
<tr><td>Very moist soil</td><td>Tends to stick together slightly, sometimes forms a very weak ball</td><td>Forms a weak ball breaks easily, will not stick. Plastic limit or nonplastic.</td><td>Forms a ball and is very pliable, sticks readily if high in clay. Exceeds plastic limit.</td><td>Easily ribbons out between fingers, has a slick feeling. Exceeds plastic limit.</td></tr>
<tr><td>Wet soils</td><td>Upon squeezing, free water may appear. Wet outline is left on hand. Nonplastic.</td><td>Upon squeezing free water may appear. Wet outline left on hand.</td><td>Can squeeze out free water. Wet outline left on hand.</td><td>Puddles and free water forms on surface. Wet outline left on hand.</td></tr>
<tr><td></td><td colspan="4">Recommended not operable by USFS Regional Soil Scientist</td></tr>
</table>
</td><td></td><td>Aquatics Biologist, Fuels Officer, Hydrologist, Road Engineer Soil Scientist, TSA, Vegetation Officer</td><td>As applicable prior to, during, and after all management activities</td></tr>
<tr><td>25</td><td>All Units</td><td>All Areas</td><td>Sensitive Plants</td><td>All</td><td>Sensitive Plants
All occurrences of sensitive plants, including all found at a later time, should be flagged and no ground-disturbing activities should be implemented within the flagged areas. When sensitive plant occurrences are found within fens, the whole fen should be protected and so trees whose roots contribute to the integrity of the fen border shall be retained and the 25 foot TKO would also apply. Monitoring should take place during project activities and directly after project activities culminate in the vicinity of sensitive plant occurrences to ensure protective measures are sufficient. If impacts to a sensitive plant occurrence are detected, monitoring should take place to determine whether or not the occurrence is still extant (has not been extirpated) and to determine whether impacts will have lasting adverse effects.</td><td></td><td>Botanist, TSA, Vegetation Officer</td><td>As applicable prior to, during, and after all management activities</td></tr>
</table>

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
26	All Units	All Areas	Non-Native Plants	All	**Non- Native Invasive Plants of Concern** This measure will be consistent with the current contract clause provision regarding equipment cleaning. Include known locations of invasive species of concern on Timber Sale Administration maps so that units with noxious weed sites in close proximity can be avoided, to prevent contamination of equipment and adjacent areas. Two occurrences of musk thistle are known in T19N, R16E, Section 32. One is in the NE ¼ of the SW ¼ and the other is in the SW ¼ of the NW ¼. Musk thistle and tall whitetop are known in the NE ¼ of the SW 1/4 of Section 29 (T19N, R16E). See Tahoe National Forest GIS Library to find the most recent Invasive Plant Inventory layer. Any materials for erosion control including gravel or straw bales should be weed free certified (although it is not proposed to bring in any materials at this time). 1. Prevention/Cleaning: Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be weed-free. The location of equipment's most recent operation shall be disclosed and off-road equipment should be cleaned prior to moving onto Sale Area when equipment is known to be from a potentially infested area. Off-road equipment shall be cleaned prior to moving from a unit shown to be infested with noxious weeds on Sale Area Map. Cleaning is not required for vehicles that will stay on the roadway. 2. Prevention/Road Construction, Reconstruction, and Maintenance: All earth-moving equipment, gravel, fill, or other materials need to be weed free. Use onsite sand, gravel, rock, or organic matter where possible. 3. Prevention/Revegetation: Use weed-free equipment, mulches, and seed sources. Avoid seeding in areas where revegetation will occur naturally, unless noxious weeds are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with noxious weeds. 4. Prevention/Staging Areas: Do not stage equipment, materials, or crews in noxious weed infested areas where there is a risk of spread to areas of low infestation. 5. Small infestations identified during project implementation will be evaluated and hand treated or "flagged and avoided" according to the species present and project constraints. If larger infestations are identified after implementation, they should be isolated and avoided with equipment (and equipment washed as in # 1 above). 6. Monitoring: Monitor for noxious weed invasion after timber sale implementation and after piles are burned.		Botanist, Fuels Officer, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
27	34, 38, 39, 46, 47, 61, 73, 76, 89, 90, 100, 163, 282	All Areas	Non-Native Plants, Sensitive Plants, Wildlife	Underburn	**Shrub Patches:** To guard against widespread cheatgrass invasion and to protect important shrub communities for forage production, avoid ignition in shrub patches that are 1/2 acre or larger. Underburning of up to 30% of these shrub patches is acceptable. The shrub communities of concern include low sagebrush flats, mountain big sagebrush communities on flats and within openings on south facing slopes, and bitterbrush communities. When masticating, only target manzanita, snowbrush and white thorn species. Only target remaining species if they are within the drip line of a leave tree or have the potential to act as ladder fuels.		Botanist, Fuels Officer, Wildlife Biologist	Implementation, post-implementation
28	All Units	All Areas	Cultural Resources	All	**Archaeological and historic sites:** Site Specific Special Protection Measures. Any archaeological sites not evaluated prior to logging will be considered as being eligible for the National Register and will be protected. Archaeologist will be consulted during layout of units that have been identified during project reconnaissance. The areas of concern identified during project reconnaissance will be flagged. These areas will be avoided during logging.		Archaeologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
29	All Units	All Areas	Cultural Resources	Pile Burning/ Underburn	**Cultural Resources:** Protect known archaeological sites during prescribed fire activities as designated by archaeologist. All polygon features will not be burned. Some linear features may be burned as designated by archaeologist. This will include hand removal of fuels from sites, and piling and burning fuels outside of sites as needed.		Archaeologist, Fuels Officer	As applicable prior to, during, and after all management activities
30	80, 85	8	Cultural Resources	All	**Protect aspens with historical carvings:** Any aspens found with historical carvings and needing protection will be identified prior to the start of aspen treatment operations and these trees will be protected.		Archaeologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
31	All Units	All Areas	Aquatic Resources	All	**Mountain yellow-legged frog:** 1. To reduce the potential of impacts to mountain yellow-legged frog (MYLF) where sightings establish the presence of MYLF, implement the following management requirements: • Within RCAs noted by the aquatics biologist as MYLF habitat or breeding areas, require no ground disturbing activities during the limited operating period (LOP) of November 30 to May 30. This LOP is needed to avoid possible interference with MYLF during a time when they may move away from stream courses. 2. To avoid impacts to MYLF, identify all drafting sites to be used, in conjunction with the proposed action, and report these to aquatics biologist, to allow the implementation of the following mitigation measures: • Prior to use each year, water drafting sites where frog habitat is present, a survey will be conducted by a aquatics biologist to determine if frogs are present. If MYLF is found to be present, the biologist will determine whether water drafting mitigations measures are needed. Use of any water source on the Sale Area will be agreed to in writing. Drafting sites shall be located to minimize sediment and maintain riparian resources, channel condition, and MYLF habitat. Use suction strainers with screens less than 2 mm in size. Place draft suction strainer in a bucket to avoid substrate and amphibian disturbance. Draft from deepest water source, near bottom. 3. To prevent effects to MYLF consult the aquatics biologist about, or do not allow the use of foam during prescribed burning activities within RCAs. 4. Individuals have been sighted in areas associated with unit 61(Emphasis areas 1 &2), unit 91 (Emphasis area 2), and unit 213 (Emphasis areas 1, 2, 4, & 6). Units 61 & 91 are proposed for hand treatment. Hand treatment units will cut trees 14 inches dbh or less, and Sporax® would not be applied to stumps. Unit 213 has the potential to cut trees greater than 14 inches dbh, therefore Sporax® may be applied. An Aquatics biologist will review areas within 500 ft of occupied sites of MYLF to determine if application of Sporax® should be avoided. 5. If wetting rain (>.25 inch) occurs during, or within two weeks prior to treatment, a biologist should survey treatment units and temporary roads within .25 mile of RCAs. If species are present, determine appropriate mitigation measures to reduce the risk of direct effects to individuals.	1.5, 1.19, 2.5	Aquatics Biologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
32	33, 34, 35, 36, 38, 39, 156, 163	All Areas	Wildlife	All	**Northern Goshawk Limited Operating Periods:** A LOP will be in effect from February 15 to September 15 for Units 33, 34, 35, 36, 38, 39, and 163. This LOP may be modified by the wildlife biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities. **California Spotted Owl Limited Operating Periods:** A LOP will be in effect from March 1 to August 15 for Units 156 and 163. This LOP may be modified by the wildlife biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities.	1.5	Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
33	All Units	All Areas	Aquatic Resources, Sensitive Plants, Wildlife	All	**TES species:** If any Federally threatened, endangered, proposed, or Forest Service sensitive species previously unknown in the project area are detected or found nesting within 0.25 miles of project activities, appropriate mitigation measures would be implemented based on input from the aquatics biologist, botanist, and/or wildlife biologist. Measures can include, but are not limited to, flagging and avoiding a plant site, implementing a species specific LOP, or designating a protected activity center.	1.5	Aquatics Biologist, Botanist, Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities
34	All Units	All Areas	Wildlife	All	**Nests/Denning Structures:** If large stick nests or signs of active denning are observed in or near trees that are designated for removal or in down logs, the occurrence and location should be reported to the wildlife biologist to determine the need for further review.		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities
35	All Units	All Areas	Wildlife	Mechanical/ Road	**30 inch dbh Trees:** Avoid the felling of trees 30 inches dbh or greater during the implementation of temporary roads, skid trails and landings, to maintain large tree wildlife habitat. If this is not possible, the wildlife biologist would be consulted.		Road Engineer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
36	All Units, 163, 213	All Areas	Soils, Wildlife	Mechanical/ Hand, Pile Burning/ Underburn	**Snag Retention:** Large snags (greater than 15 inches dbh) would be retained within all subunits, regardless of emphasis area. Where currently available within emphasis area 1, 2 and 5 subunits, some decadent firs with declining crown characteristics would be retained for future snag recruitment. Where existing snag levels are low, particularly within the plantations, silvicultural prescriptions retain all snags greater than three inches dbh. **Underburn and Snags**: Hand-constructed fire lines would be placed around large snags before applying low intensity surface fire prescriptions. Each subunit's low intensity surface fire prescription (available in the project record) specifies the numbers of snags to be lined, based on existing numbers of large snags within the subunit. In emphasis area 1 and 2 subunits proposed for underburning, between 10 and 18 large snags per acre would be lined while in emphasis area 4, 5, 6, and 7 subunits, between 2 and 10 large snags per acre would be lined. **Pile burn and Snags:** In treatment units where hand or grapple piling of fuels would be conducted, piles would be located a sufficient distance from large snags (greater than 15 inches dbh) to ensure the snags did not ignite during pile burning operations. **Down Woody Material:** In all subunits, regardless of emphasis area, the largest available down logs (larger than 15 inches diameter and ten feet long) would be retained during implementation of silvicultural treatments (mechanical thinning or mastication). Crushing of large down logs with machinery would be avoided. **Underburn and Woody Material:** In units proposed for application of low intensity surface fire following silvicultural treatments, the largest down logs per acre would be lined to protect them during underburning operations. In emphasis area 1 and 2 subunits, line 15 to 20 large down logs per acre prior to underburning. In emphasis area 4, 5, 6, and 7 subunits, line 3-7 large down logs per acre, with the exception of subunits 163-5, 163-7, and 213-4. In these subunits, approximately 15 to 20 large logs per acre would be lined prior to application of low intensity surface fire. In treatment units proposed for surface fire prescriptions, approximately 30 percent of each unit's area would not be underburned. Small woody material would be retained in these unburned areas of the treatment units. **Pile Burn and Woody Material:** In treatment units proposed for grapple or hand piling, piles would be located a sufficient distance from large down logs to ensure the logs did not ignite during pile burning operations. In addition, piling would not be conducted on approximately 30 percent of the unit, allowing for retention of small down woody material.		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation, post-implementation
37	33, 34, 35, 36, 38, 73, 85, 89, 90, 100, 163, 213	All Areas	Wildlife	Mechanical/ Hand	**Decadent feature enhancement** - Two different treatments; partial tree girdling and short snag creation. Partial tree girdling would occur inside and outside of DCAs and short snag creation would only occur in DCAs. Both treatments would only be applied in subunits where the current snag/short snag densities are substantially below desired densities. **Partial tree girdling** would involve girdling (cutting off the bark layer deep enough to sever the tree's vascular system in the cambium) of individual trees 15-30 inches dbh. The bark layer would be removed in a 6-12 inch band covering approximately ⅓ of the diameter of pine trees and ½ of the diameter of fir trees. The selection of trees for partial tree girdling would occur after the DCA and ESO, legacy tree treatment, variable thinning and suppressed cut prescriptions had been applied (marked). Trees selected outside of DCAs for partial girdling would be trees already selected under the variable thinning prescription for removal. Trees selected for partial girdling in DCAs would be designated based on the site specific conditions in the DCAs and would be trees that would provide needed habitat structure in the DCAs. **Short snag creation** involves cutting a tree (preferentially a white fir), on the outside edge, but within a DCA, at a height of 10-20 feet above the ground. The height would be based on the highest point a piece of machinery such as a feller buncher, could reach to cut the tree. The top of the tree would be felled into the interior of the DCA and left to contribute to down log densities. Trees selected for this treatment would be 15-30 inches dbh.		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
38	All Units	All Areas	Air Quality	Pile Burning/ Underburn	**Air Quality:** The fuels officer will coordinate with the Air Quality Coordinator to design the waste fire plan. Burning permits would be acquired from the Northern Sierra Air Quality Management District. The Air Quality District would determine days when burning is allowed. The California Air Resources Board (CARB) provides daily information on "burn" or "no burn" conditions. Burn plans will be designed and all fuel reduction burning will be implemented in a way to minimize particulate emissions. Prescribed fire implementation will coordinate daily and seasonally with other burning permittees both inside and outside the forest boundary to help meet air quality standards.		Fuels Officer	Implementation, post-implementation
39	76, 282	2, 4	Aquatic Resources, Fuels Mgmt, Soils/Hydrology	Hand	**Treatment in RCA:** Some trees will be hand felled into the intermittent channel to provide channel stability. An aquatics biologist or hydrologist will work with hand crews to determine the distribution and placement of trees. This action would be designed to be consistent with the LWQCB Wildlife Habitat Exemption category as well as all LWQCB provisions (particularly SMRs 22 and 23) stated previously in this appendix. The coarse woody debris marking and potential handfelling actions would not exceed a total of 5 acres in size, would be implemented by manual methods, and would not involve the use of mechanical or tracked equipment .	1.8, 1.19	Aquatics Biologist, Fuels Officer, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
40	213	2, 4	Aquatic Resources, Soils/Hydrology	Mechanical	**Marking of RCA:** Hydrologist and/or aquatics biologist will assist in the marking and layout of RCAs in emphasis areas 2 and 4 in unit 213.	1.2, 1.8, 1.18, 1.19, 5.2, 5.3, 5.6, 7.2, 7.3	Aquatics Biologist, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
41	85, 87	All Areas	Sensitive Plants, Soils/Hydrology	Road	**Watershed Restoration/Road Decommissioning:** • Watershed improvements were assessed, identified and incorporated into the proposed action. • All required state and federal permitting processes, such as CEQA, water quality and 404 permits would be complied with prior to implementation of stream and wetland restoration. • The CEQA scoping, document development, noticing and public review will occur prior to obtaining the necessary prohibition exemptions, and address the required basin plan criteria. (BMP 7.1) **Road 11-5, Action 1:** Approximately one mile of this road would be obliterated following its use for vegetation treatment activities. This road would be reopened to access and treat units 85 and 87 for approximately one mile. Upon completion of the treatments in these units, this segment of road would be obliterated. Road obliteration would consist of re-contouring the roadbed to a hydrologically neutral state. This also includes emphasizing protection and neutral landscape configuration above fens, designing drainage to match natural patterns, reducing compaction (sub-soiling), blocking the closed portions from future access, and mulching or otherwise providing slash and soil organic matter to control erosion. **Road 11-5, Action 2:** On the section of road 11-5 below the obliteration work described in Action 1 above, where the road crosses through a fen and aspen stand, the road and its associated culvert system would be removed and full restoration measures would be implemented. The existing elevation of the culvert is placed subgrade, such that the water in the fen is draining at an accelerated rate and resulting in an ongoing reduction in fen size. Restoration measures would include filling the culvert alignment and reshaping the roadbed to support the function and hydrology of the fen (currently approximately 1.2 acres). Revegetation activities would be implemented and may include local seed and/or small plugs of sedge mat or other local vegetation obtained adjacent to the fen. Mulching would be provided as needed to control erosion and stabilize the site.	1.8, 1,19, 2.3, 2.4, 2.7, 2.8, 2.13, 5.4, 7.1, 7.2, 7.3	Botanist, Hydrologist, Road Engineer Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
42	61, 163	All Areas	Sensitive Plants, Soils/Hydrology	Pile Burning/ Underburn	**Prescribed Fire and the Mason Fen:** (Downslope from Units 61 and 163) prior to performing prescribed burns the residual amounts of downed woody debris will be assessed to determine whether additional fuel modification is necessary to achieve the following objectives. Accumulation of downed woody debris shall be discontinuous from the edge of the 50 foot buffer to the edge of the fen, or soil moisture in the 50 foot buffer will be high enough to prevent a fast spreading flaming surface fire, a slow moving smoldering surface fire would be acceptable. Soil moisture in fens will be high enough to limit the burning of peat. If necessary, water will be brought to the site and be available to maintain objectives. Ground disturbing methods of fire suppression will be avoided within the 50 foot fen buffer and inside the fen. Also see SMR 42.	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
43	46, 61, 80, 85, 98, 99, 163	All Areas	Sensitive Plants, Soils/Hydrology	All	**Fens:** Fen areas are located within units 46, 85 and 98 and downstream from units 61 and 163. Other units with fens in close proximity are units 80 and 99. Five fens without known sensitive plant occurrences are located in unit 85. Implement a 25' Tractor Keep Out (TKO) along the periphery of all fens in these areas. The silviculturist has worked with the botanist and hydrologist or soil scientist to extend this as a "no treatment zone" outside the fen area to areas as needed to maximize protection of the fens. A botanist and/or hydrologist will also be present to assist in marking and layout around the fens. For fens in Units 46, 85, 98, and 99, post "Flag and Avoid" mitigations with Tractor Keep Out signs to prevent tractors from operating within 25 feet of the riparian edge of the wet features/fens. The fen areas are located in southwestern edge of 85 and three fens are present in the central portion of 46 within emphasis area 4 and in the central portion of unit 98. Place density cover patches around fens within unit 98.	1.8, 1.19, 7.2, 7.3	Botanist, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
44	80, 85	8	Fuels Mgmt, Sensitive Plants, Soils/Hydrology, Vegetation Mgmt, Wildlife	Pile Burning/ Underburn	**Pile Burning in Aspen:** Excess remaining project-generated slash would be removed and hand piled outside of the aspen root footprint as determined by botanist or hydrologist, and burned to reduce slash to a level that would not inhibit the aspen suckering response. The location of the piles to be burned would be advised by the hydrologist to maintain water quality and would not be within 25 feet of riparian vegetation.	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, TSA, Vegetation Officer	Implementation, post-implementation
45	80	8	Aquatic Resources, Fuels Mgmt, Vegetation Mgmt	All	**Mountain Yellow-legged Frog Limited Operating Period (LOP):** To reduce the potential of impacts to mountain yellow-legged frog (MYLF), on stream in 80-8, add a 200 foot limited operating period (LOP) buffer to the standard Riparian Conservation Area (RCA). Within the combined RCA and LOP buffer, no ground disturbing activities would be permitted during the LOP of November 30 through May 30. This LOP is needed to avoid possible interference with MYLF during a time when they may move away from stream courses. -To prevent effects to MYLF consult the aquatics biologist about, or do not allow the use of foam during prescribed burning activities within RCAs.	1.5, 1.8, 1.19, 6.2, 6.3	Aquatics Biologist, Fuels Officer, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
46	46	4	Sensitive Plants, Soils/Hydrology	Pile Burning/ Underburn	**Emphasis area 4 in plantations:** Stop ignitions within 25 feet of emphasis area 4 boundary from emphasis areas 5 or 6. Allow but minimize (do not encourage) fire creep into emphasis area 4 in unit 46.	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation